

**In the United States Patent and Trademark Office**

Application No.: not assigned  
 Filed: Filed herewith  
 Title: Three-Dimensional Pattern Recognition Method to Detect Shapes in Medical Images  
 Applicant(s): Salih B. Gokturk  
 Examiner: not yet assigned  
 Art Unit: not yet assigned

Mailed 9 -30 - 03  
Palo Alto, CA

**Information Disclosure Statement**

Commissioner of Patents and Trademarks  
Washington, District of Columbia 20231

Dear Sir or Madam:

Attached is a completed Form PTO-1449 and copies of the pertinent parts of the references cited thereon. It is requested that the document(s) on the enclosed form be made of record.

**Part I (Authority)**

This statement is filed pursuant to:

☒ 37 C.F.R. § 1.97(b).

This information disclosure statement is filed either (1) within three months of the filing date of the national applications; (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; or (3) before the mailing date of a first office action on the merits, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☐ 37 C.F.R. § 1.97(c).

This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of either (1) a final action under 37 C.F.R. § 1.113 or (2) a notice of allowance under 37 C.F.R. § 1.311.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) (\$240), or a certification according to 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).

This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c).

Accordingly, this information disclosure statement requires the petition fee specified in 37 C.F.R. § 1.17(i)(1) to consider an information disclosure statement under 37 C.F.R. § 1.97(d) (\$130), a certification according to 37 C.F.R. § 1.97(e), and a petition requesting consideration of the information disclosure statement.

**Conditional Petition**

It is respectfully requested that this information disclosure statement be considered, good cause being presented in Part III herein (certification). please treat this paper as the required petition.

If this statement crosses in the mail with an office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record.

To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

## Part II (Payment)

A check is enclosed as indicated:

- ☒ (X) No fee is due.
- ☐ ( ) The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) is enclosed (\$240).
- ☐ ( ) The petition fee specified in 37 C.F.R. § 1.17(i)(1) to consider an information disclosure statement under 37 C.F.R. § 1.97(d) is enclosed (\$130).

## Part III (Certification)

Pursuant to 37 C.F.R. § 1.97(e), I certify:

- ☒ (X) No certification is necessary.
- ☐ ( )
  - (1) Each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the statement.
  - ☐ ( ) The "communication from a foreign patent office" referred to in the certification is an International Search Report, possibly issued by the U.S. Patent and Trademark Office in its capacity as an International Search Authority or International Preliminary Examining Authority.
  - ☐ ( ) The "counterpart foreign application" referred to in the certification corresponds to an ancestor or descendent application of the application for which this information disclosure statement is filed.
- ☐ ( ) (2) No item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c), more than three months prior to the filing of the statement.

## Part IV (Additional Statement)

An additional statement regarding these items of information ☐ ( ) is, ☒ (X) is not, enclosed.

Copies of the cited art ☒ (X) are enclosed, ☐ ( ) are of record in parent application Serial No. \_\_\_\_\_ and will be provided if the Examiner deems it convenient.

Dated: 9-03-03

Respectfully submitted,



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FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE										ATTY. DOCKET NO. S01-264		SERIAL NO. Not yet assigned		
<b>LIST OF PRIOR ART CITED BY APPLICANT</b> (Use several sheets if necessary)										APPLICANT Salih B. Gokturk				
										FILING DATE Filed Herewith		GROUP Not yet assigned		
<b>U.S. PATENT DOCUMENTS</b>														
EXAMINER INITIAL		DOCUMENT NUMBER						DATE	NAME	RELEVANT INFORMATION				
	A	6	0	8	3	1	6	2	07/04/2000	Vining				
	B	5	9	2	0	3	1	9	07/06/1999	Vining et al.				
	C	5	9	7	1	7	6	7	10/26/1999	Kaufman et al.				
	D	5	8	9	1	0	3	0	04/06/1999	Johnson et al.				
	E	5	4	9	1	6	2	7	02/13/1996	Zhang et al.				
	F	5	4	5	8	1	1	1	10/17/1995	Coin				
	G	20030161522						08/22/2003	Campanini et al.					
	H	20030172043						09/11/2003	Guyon et al.					
<b>FOREIGN PATENT DOCUMENTS</b>														
		2- letter code	DOCUMENT NUMBER						DATE	COUNTRY	TRANSLATION			
											YES      NO			
	I													
	J													
<b>OTHER PRIOR ART</b> (Including Author, Title, Date, Pertinent Pages, Etc.)														
	K		Wingo P.J., Cancer Statistics, ca Cancer Journal Clin, 1995; 45:8-30.											
			Thoeni R.F., Laufer I. "Polyps and cancer," Textbook of Gastrointestinal Radiology, Philadelphia: W.B. Saunders, 1994; 1160											
	L		Winawer S.J., Zauber A.G., Ho M.N., O'Brien M.J., Gottlieb L.S., Sternberg S.S., Waye J.D., et al. "Prevention of colorectal cancer by colonoscopic polypectomy," The national polyp study workgroup, N. Engl. J. Med. 1993; 329: 1977-1981											
			Jerebko et al. "Computer-aided polyp detection in CT colonography using an ensemble of support vector machines" International Congress Series 1256 (2003) pp. 1019-1024											
	M		K. Veropoulos et al. (1999) in a paper entitled "Controlling the sensitivity of support vector machines" and presented at the Int. Joint Conf. AI (IJCAI'99), Stockholm, Sweden											
			DM Eddy (1990) entitled "Screening for colorectal cancer" and published in Ann. Intern Med., 113 373-384											
	N		RM Summers et al. (2000) entitled "Polypoid lesions of airways: early experience with computer-assisted detection by using virtual bronchoscopy and surface curvature" and published in Radiology 208 (2):331-337											
			Yoshida et al., (2000) in a paper entitled "Detection of colonic polyps in CT colonography based on geometric features" and published in Radiology 217 (SS):582-582											
<b>EXAMINER</b>									<b>DATE CONSIDERED</b>					
* <b>EXAMINER:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.														

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A							
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G							
H							
<b>FOREIGN PATENT DOCUMENTS</b>							
		2- letter code	DOCUMENT NUMBER		DATE	COUNTRY	
						TRANSLATION	
						YES	NO
I							
J							
<b>OTHER PRIOR ART</b> (Including Author, Title, Date, Pertinent Pages, Etc.)							
K		SB Gokturk & C Tomasi (2000) in a paper entitled "A graph method for the conservative detection of polyps in the colon" and published at the 2 <sup>nd</sup> International Symposium on Virtual Colonoscopy November 2000 Boston, USA					
		DS Paik et al. (2000) in a paper entitled "Computer aided of polyps in CT colonography: Free response roc evaluation of performance" and published in Radiology 217 (SS)370					
L		DS Paik et al. (1999) in a paper entitled "Detection of polyps in CT colonography: A comparison of a computer aided detection algorithm to 3-D visualization methods" and published in Radiology Society of North America 85 <sup>th</sup> Scientific Sessions. Chicago, IL: Radiology Soc. N. Amer. P. 428					
		MK Hu (1962) entitled "Visual pattern recognition by moment invariants" and published in IRE transactions on information theory IT-8:179-187					
M		B Scholkopf (1997) in a book entitled "Support Vector Learning" and published by Munich, Germany; R. Oldenbourg Verlag.					
N							
<b>EXAMINER</b>					<b>DATE CONSIDERED</b>		
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